Amendments to the Claims

Please amend Claims 1 and 23-25, all as shown below. Applicant respectfully reserves the right to prosecute any originally presented or cancelled claims in a continuing or future application.

1. (Currently Amended) A computer implemented method for discriminatively selecting keyframes representative of segments of a source digital media, comprising the steps of:

obtaining said source digital media for which keyframes are to be selected, wherein said source digital media comprises a plurality of segments, wherein said plurality of segments comprises a plurality of frames, said plurality of frames comprising candidate keyframes;

pre-processing said source digital media to obtain a plurality of feature vectors, said feature vectors being representative of the candidate keyframes;

determining in-class similarity values for said candidate keyframes, wherein the in-class similarity values are determined by comparing the feature vectors for the candidate keyframes to other feature vectors found solely within the same segment the candidate keyframes come from;

determining out-of-class similarity values for said candidate keyframes, wherein the out-of-class similarity values are determined by comparing the feature vectors for the candidate keyframes to other feature vectors found solely outside of the segment the candidate keyframes come from; [[and]]

discriminatively selecting a keyframe for each segment based on both the in-class similarity values and the out-of-class similarity values of the candidate keyframes, wherein each selected keyframe is both representative of the segment the selected keyframe originates from and distinguishable from other selected keyframes which are representative of the remaining plurality of segments; [[and]]

wherein the chronological order of the selected keyframes as they appear within the source digital media is maintained during the step of discriminatively selecting a keyframe for each segment[[.]]; and

wherein the method steps are done by at least one processor.

2. (Cancelled)

3 (Original) The method of Claim 1, wherein said source digital media includes a plurality of items of digital media.

4. (Original) The method of Claim 3, comprising the step of:

concatenating said plurality of items of digital media into one item of source digital media.

5. (Original) The method of Claim 1, wherein said source digital media is digital video.

6. (Original) The method of Claim 1, wherein said source digital media is a digital image.

7. (Original) The method of Claim 1, wherein said source digital media is digital audio.

8. (Original) The method of Claim 1, wherein said source digital media is a digital text.

9. (Original) The method of Claim 1, wherein said source digital media is a concatenation of digital video and a digital image.

10. (Original) The method of Claim 1, further comprising the step of:

determining, subsequent to said step of obtaining, if said source digital media includes more than one item of digital media.

11. (Previously Presented) The method of Claim 10, further comprising the step of:

concatenating said digital media into one item of source digital media if it is determined that said source digital media includes more than one item of digital media.

12-20. (Cancelled)

21. (Previously Presented) A computer-readable medium having executable instructions stored thereon that performs the method of discriminatively selecting keyframes representative of digital media, comprising the steps of:

obtaining said digital media for which keyframes are to be selected;

segmenting said digital media into a plurality of segments, wherein said plurality of segments comprises a plurality of frames, said plurality of frames comprising candidate keyframes;

pre-processing said digital media to obtain a plurality of feature vectors, said feature vectors

being representative of the candidate keyframes;

determining in-class similarity values for said candidate keyframes, wherein the in-class similarity values are determined by comparing the feature vectors for the candidate keyframes to other feature vectors found solely within the same segment the candidate keyframes come from;

determining out-of-class similarity values for said candidate keyframes, wherein the out-of-class similarity values are determined by comparing the feature vectors for the candidate keyframes to other feature vectors found solely outside of the segment the candidate keyframes come from;

discriminatively selecting a keyframe for each segment based on both the in-class similarity values and the out-of-class similarity values of the candidate keyframes, wherein each selected keyframe is both representative of the segment the selected keyframe originates from and distinguishable from other selected keyframes which are representative of the remaining plurality of segments; and

wherein the chronological order of the selected keyframes as they appear within the source digital media is maintained during the step of discriminatively selecting a keyframe for each segment.

22. (Previously Presented) The method of Claim 1, wherein the candidate keyframe having the largest goodness function value within each segment is discriminatively selected to be the keyframe for the segment it originates from, wherein the goodness function value is calculated based on both the in-class similarity values and the out-of-class similarity values.

23. (Currently Amended) A computer implemented method for discriminatively selecting keyframes representative of segments of a source digital media, comprising the steps of:

obtaining said source digital media for which keyframes are to be selected, wherein said source digital media comprises a plurality of segments, wherein said plurality of segments comprises a plurality of frames, said plurality of frames comprising candidate keyframes;

pre-processing said source digital media to obtain a plurality of feature vectors, said feature vectors being representative of the candidate keyframes;

determining in-class similarity values for said candidate keyframes, wherein the in-class similarity values are determined by comparing the feature vectors for the candidate keyframes to other feature vectors found solely within the same segment the candidate keyframes come from;

determining out-of-class similarity values for said candidate keyframes, wherein the out-of-

class similarity values are determined by comparing the feature vectors for the candidate keyframes to other feature vectors found solely outside of the segment the candidate keyframes come from;

discriminatively selecting a keyframe for each segment based on both the in-class similarity values and the out-of-class similarity values of the candidate keyframes, wherein each selected keyframe is both representative of the segment the selected keyframe originates from and distinguishable from other selected keyframes which are representative of the remaining plurality of segments;

wherein the candidate keyframe having the largest goodness function value within each segment is discriminatively selected to be the keyframe for the segment it originates from, wherein the goodness function value is calculated based on both the in-class similarity values and the out-of-class similarity values; [[and]]

wherein the goodness function value for each candidate keyframe comprises a subtractive figure, wherein the out-of-class similarity value is subtracted from the in-class similarity value for each candidate keyframe[[.]]; and

wherein the method steps are done by at least one processor.

24. (Currently Amended) A computer implemented method for discriminatively selecting keyframes representative of segments of a source digital media, comprising the steps of:

obtaining said source digital media for which keyframes are to be selected, wherein said source digital media comprises a plurality of segments, wherein said plurality of segments comprises a plurality of frames, said plurality of frames comprising candidate keyframes;

pre-processing said source digital media to obtain a plurality of feature vectors, said feature vectors being representative of the candidate keyframes;

determining in-class similarity values for said candidate keyframes, wherein the in-class similarity values are determined by comparing the feature vectors for the candidate keyframes to other feature vectors found solely within the same segment the candidate keyframes come from;

determining out-of-class similarity values for said candidate keyframes, wherein the out-of-class similarity values are determined by comparing the feature vectors for the candidate keyframes to other feature vectors found solely outside of the segment the candidate keyframes come from;

discriminatively selecting a keyframe for each segment based on both the in-class similarity values and the out-of-class similarity values of the candidate keyframes, wherein each selected keyframe is both representative of the segment the selected keyframe originates from and

distinguishable from other selected keyframes which are representative of the remaining plurality of segments;

wherein the candidate keyframe having the largest goodness function value within each segment is discriminatively selected to be the keyframe for the segment it originates from, wherein the goodness function value is calculated based on both the in-class similarity values and the out-of-class similarity values; [[and]]

wherein the goodness function value for each candidate keyframe comprises a rational figure, wherein the in-class similarity value is divided by the out-of-class similarity value for each candidate keyframe[[.]]; and

wherein the method steps are done by at least one processor.

25. (Currently Amended) A computer implemented method for discriminatively selecting keyframes representative of segments of a source digital media, comprising the steps of:

obtaining said source digital media for which keyframes are to be selected, wherein said source digital media comprises a plurality of segments, wherein said plurality of segments comprises a plurality of frames, said plurality of frames comprising candidate keyframes;

pre-processing said source digital media to obtain a plurality of feature vectors, said feature vectors being representative of the candidate keyframes;

determining in-class similarity values for said candidate keyframes, wherein the in-class similarity values are determined by comparing the feature vectors for the candidate keyframes to other feature vectors found solely within the same segment the candidate keyframes come from;

determining out-of-class similarity values for said candidate keyframes, wherein the out-of-class similarity values are determined by comparing the feature vectors for the candidate keyframes to other feature vectors found solely outside of the segment the candidate keyframes come from;

discriminatively selecting a keyframe for each segment based on both the in-class similarity values and the out-of-class similarity values of the candidate keyframes, wherein each selected keyframe is both representative of the segment the selected keyframe originates from and distinguishable from other selected keyframes which are representative of the remaining plurality of segments;

wherein the candidate keyframe having the largest goodness function value within each segment is discriminatively selected to be the keyframe for the segment it originates from, wherein the goodness function value is calculated based on both the in-class similarity values and the out-

of-class similarity values; [[and]]

wherein the in-class similarity values and the out-of-class similarity values are biased when determining the goodness function value for each candidate keyframe[[.]]; and

wherein the method steps are done by at least one processor.

26. (Previously Presented) The method of Claim 1, wherein said step of discriminatively selecting a keyframe includes the step of discriminatively selecting a plurality of keyframes as being representative of each segment.

27. (Previously Presented) The method of Claim 1, wherein the feature vectors are obtained based on low-order discrete cosine transform coefficients.

28. (Previously Presented) The method of Claim 1, wherein the feature vectors are obtained for a group of frames.

29. (Previously Presented) The method of Claim 1, wherein the feature vectors are obtained for each frame.

30. (Previously Presented) The method of Claim 1, wherein the feature vectors are obtained for only a portion of the frames.

31. (Previously Presented) The method of Claim 1, wherein the in-class similarity values and out-of-class similarity values are determined utilizing linear discriminant analysis.

32. (Previously Presented) The method of Claim 1, wherein the in-class similarity values and out-of-class similarity values are determined using latent semantic indexing.